

Trade in Environmentally Sound Technologies Opportunities and Challenges in the ASEAN region

Policy Brief

Trade in environmentally sound technologies offers triple win opportunities for the environment, economy and people in developing countries

Expanding the use of environmentally sound technologies (ESTs) can serve as a driver for development, resilience and the achievement of global goals. The uptake of ESTs contributes to several Sustainable Development Goals (SDGs), such as goal 7 on energy, goal 8 on economic growth, goal 12 on sustainable consumption and production, and goal 13 on climate action.

Trade liberalization can further facilitate market creation and expansion for ESTs and generate opportunities for companies, particularly in developing countries¹, to participate in regional and global value chains. Increasing trade in ESTs offers triple win opportunities by promoting economic development, job creation and innovation while simultaneously fostering economic and climate resilience and enabling countries to more efficiently access the goods and services needed to improve their environmental performance.

ESTs covered in the ASEAN regional study: biomass boilers, solar energy, wind power, and hydro-electric turbines (small-scale).

What are environmentally sound technologies (ESTs)?

ESTs are technologies that have the potential to significantly improve environmental performance relative to other technologies. They are not just individual technologies but can also refer to total systems that include know-how, procedures, goods and services, equipment, as well as organizational and managerial procedures for promoting environmental sustainability. Examples include technologies related to renewable energy, waste management and pollution management.



Spotlight on the ASEAN region: the policy context



The Association of Southeast Asian Nations (ASEAN) is a regional intergovernmental organization comprising ten Member States: **Indonesia, Malaysia, Philippines, Singapore, Thailand, Brunei Darussalam, Lao PDR, Cambodia, Vietnam and Myanmar**. Its aims include promoting collaboration and accelerating economic growth and social progress. Thailand, as Chair of ASEAN for 2019, has chosen the theme '**Advancing Partnership for Sustainability**', placing emphasis on aligning ASEAN policies with the SDGs, tackling climate change and protecting the region's environment and natural resources.

Strong economic growth in the region is fueling demand for energy. According to the 4th ASEAN Energy Outlook, it is estimated that between 2013 and 2035 **energy demand will grow at an average annual rate of 4.3%**. At the same time, **Southeast Asia is one of the most at-risk regions in the world to the impacts on climate change**. ASEAN is responding to the threat of climate change through the

implementation of the ASEAN Socio-Cultural Community Blueprint 2025 and the ASEAN Working Group on Climate Change's Action Plan. Trade in ESTs can play a key role in building climate resilience.

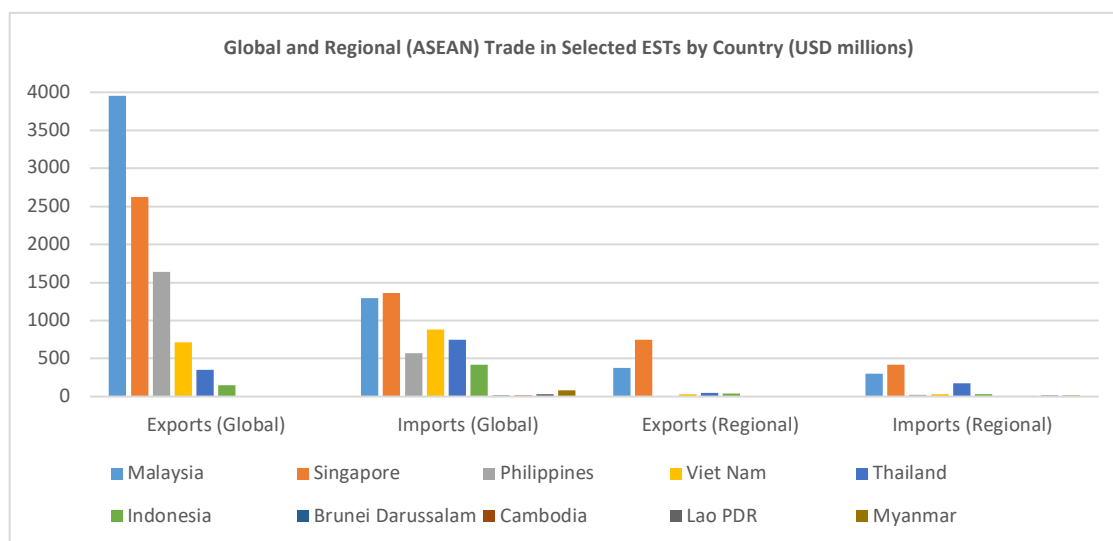
ASEAN member states are also taking a pro-active approach under the Paris Agreement, including through pledges to significantly reduce their greenhouse gas emissions. While the pledges vary across countries, **renewable energy generally plays a prominent role in countries' Nationally Determined Contributions**.

The ASEAN Plan for Action on Energy Cooperation also sets out a target to **increase the share of renewables in total primary energy consumption to 23% by 2025**. Indonesia, Malaysia, Thailand and Vietnam will be central to achieving this target as they are projected to account for 80% of the increase in the share of renewable energy within ASEAN. With respect to energy efficiency and energy savings, ASEAN Member States have undertaken to **reduce their energy intensity by 20% by 2020 and 30% by 2025**, compared to 2005 levels.

¹ The report groups countries according to the UN M49 classification.

Key findings

- ASEAN's trade in ESTs with the world is much higher than within the region; 80 per cent of the region's trade in ESTs is with the EU, the US and Japan and in 2015, the region accounted for 15% of total global trade in ESTs.
- Intra-regional exports of the ESTs analyzed in the regional study have grown at a rate of 12% per annum, while intra-regional imports grew at a rate of 16% on average. Singapore and Malaysia are leading the intra-regional trade in ESTs and solar-energy technologies (solar water heaters and solar PV combined) account for more than 90% of intra-regional trade.
- The share of exports of selected ESTs to the ASEAN region relative to total exports declined between 2000 and 2015.
- While Malaysia, the Philippines and Singapore have been net exporters of solar technologies, the volume of their exports to the rest of the ASEAN region has declined in recent years.
- The services sector is a major contributor to the ASEAN economy. ASEAN is a net exporter of services, which may offer new opportunities for environmental services, especially those related to renewable energy installation, maintenance, and consulting. In 2016, Intra-ASEAN trade in services comprised about 17% of total trade in services.



Opportunities and challenges for ASEAN

- The APEC Agreement on Environmental Goods, which commits Member States to reduce tariffs on 54 environmental goods to 5% or less, can help facilitate the diffusion of ESTs in the region (7 of 10 ASEAN Member States are also APEC Members). In Brunei, Malaysia, the Philippines, Singapore, Thailand and Vietnam, tariff rates for most goods have already declined below 5%.
- With tariff barriers generally in decline, non-tariff barriers now present a more significant impediment to trade in ESTs and significant welfare gains stand to be made in ASEAN from their removal.
- Supportive policies and regulatory frameworks in the ASEAN region reveal a strong commitment to promote renewable energy technologies nationally and regionally. However, diffusion rates across ASEAN countries vary and domestic deployment of the selected ESTs within ASEAN remains relatively modest due to factors including a lack of policy coherence and policy implementation inconsistencies.
- The ASEAN region has a growing network of trade and investment agreements, including with China, Korea, Australia & New Zealand, India, Japan and Hong Kong, China. Yet challenges relating to policy coherence, coordination and long-term planning can act as a barrier to trade and investment in ESTs.
- Trade liberalization alone will not be sufficient to generate a regionally integrated market for trade in ESTs. The availability of investment and incentives to increase the uptake of ESTs are also important for market creation and value chain integration.
- ASEAN's investment needs for renewable energy are estimated to be USD 400 billion for the period 2016-2030. However, 55% of renewable energy projects in Southeast Asia are not financially viable without government support and other mechanisms.
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How can ASEAN harness trade opportunities in Environmentally Sound Technologies?

- Improve enabling conditions to facilitate trade and investment by ensuring governance and regulatory frameworks are coherent. For example, policies aimed at promoting renewable energy must consider key issues such as permit requirements, electricity subsidies and local content requirements. This should be complemented by efforts including technical and financial assistance, targeted particularly at the lower income economies in ASEAN.
- Promote intra-regional EST trade through enhanced regional coordination, cooperation and international partnerships, which can enable cross-country learning and the sharing of experience, knowledge and good practices including in relation to reducing trade and transaction costs.
- Improve collection and sharing of trade data to clearly define ESTs, address the issue of dual-use, improve classification of environmental services, and capture the complementarity between environmental goods and services.
- Further strengthen ASEAN's trade, investment and economic cooperation agreements and deepen the scope of liberalization to make existing renewable energy goods and services value-chains even more attractive and competitive.
- Reduce or, if possible, eliminate tariff-related barriers and explore whether rules of origin are impeding the use of preferential tariffs in technologies that have higher MFN tariffs.
- Reduce non-tariff barriers negatively impacting EST trade, such as arduous procedural requirements and non-transparent customs formalities and valuation practices—which are exacerbated by the absence of harmonized standards and classification systems for goods and services relates to ESTs.
- Improve trade facilitation in ESTs by addressing arduous procedural requirements including customs formalities and valuation practices reducing non-tariff barriers
- Build institutional capacity, especially in terms of regulatory reform and trade facilitation in the context of external border agency cooperation, advance rulings, involvement in the trading community and appeal procedures.

Malaysia case study

The solar PV industry in Malaysia has grown from a relatively small, niche segment to a high-growth sector in this high-technology industry. Indeed, Malaysia is the world's third largest producer of solar PV products. In 2016, exports grew 14% to reach USD 11.1 billion in value. It has also successfully attracted significant amounts of FDI in various segments of PV production, which augurs well for the country's aspiration to become the global hub for solar PV manufacturing.

The industry benefits from strong supplier-buyer linkages with China, Germany, the US, Japan and South Korea, while its linkages within ASEAN are mostly with Thailand, Singapore and Viet Nam. The presence of multinational companies in Malaysia has helped develop the more capital-intensive segments of the solar PV value chain and have created opportunities for local firms to participate in the global value chain for solar PV. Export and investment promotion agencies have played a critical role in developing the solar PV industry, as have the Feed in Tariffs and other incentive schemes supporting solar PV.

Compared to other renewable energy technologies, solar PV is currently the fastest developing source of renewable energy in Malaysia, but its full potential is yet to be realized. Tariff barriers still exist, mostly in the trade in components, while non tariff barriers are mostly related to the regulatory and procedural requirements.

Energy policies implemented over the past two decades have helped spur the development of the downstream market for solar PV. Following the 2018 elections in Malaysia, the new government adopted plans that aim to rapidly increase the domestic market for ESTs by seeking to both increase the supply of and demand for renewable energy. Currently at 2%, the country has adopted a target of 20% renewables use by 2025.

Malaysia shows potential to further increase solar PV exports, build up its domestic solar PV market, and support knowledge transfer and capacity-building in other ASEAN countries intending to venture into solar PV.



About this project

Led by the Environment and Trade Hub of UN Environment in collaboration with Technical University of Denmark and the University of Malaya, this project aims to support and enable developing countries in the ASEAN region to objectively assess and understand the opportunities, benefits and challenges of liberalized trade in environmentally sound technologies and thus contribute to the implementation of climate goals and the Sustainable Development Goals related to trade, energy, technology and climate change.

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